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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 20031229

Application Number: 09/354,500
Filing Date: July 16, 1999
Appellant(s): SCHERMER ET AL.

Thomas W. Saur
For Appellant

SUPPLEMENTAL EXAMINER'S ANSWER

This is in response to the appeal brief filed 21 August 2003.

This supplemental examiner's answer supersedes the Examiner's Answer mailed 12/24/03. That communication inadvertently omitted addressing one of the grounds of rejection that is on appeal.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is substantially correct. The changes are as follows: The advisory action mailed 3/25/03 (Paper No. 23) indicated that the rejection under 35 USC 112, first paragraph, would be withdrawn, in view of the response filed 3/18/03. The examiner will also withdraw the rejection under 35 USC 112, second paragraph, with

respect to the phrase "quantitation data." The claims have been interpreted as broadly as their terms reasonably allow. "Quantitation data" has been given its plain meaning as the specification provides no specific definition. It is not limited to a particular method or type of quantitation as argued by appellant.

(7) Grouping of Claims

The rejection of claims 1-18 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

5,578,832	TRULSON ET AL.	11-1996
5,807,522	BROWN ET AL.	9-1998
6,225,636	GINESTET	5-2001
6,075,613	SCHERMER ET AL.	6-2000

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trulson et al. (U.S. Patent No. 5,578,832) or Brown et al. (U.S. Patent No. 5,807,522) in view of Ginestet (U.S. Patent No. 6,225,636).

Trulson et al. discloses a method and system for correcting data with overlapping dye emission spectra in nucleic acid microarray analysis. Glass slides and fluorescent dyes are particularly disclosed. The microarray is scanned for each dye to produce dye images. The images are deconvoluted using ratios of brightness. A four by four emission cross section matrix is produced. The data is normalized. (See abstract; claims; columns 3-5; Figures 13-19; and columns 22-26.) A problem solved by the reference is how to handle the emission spectral overlap (crosstalk) between the labels. (See column 22, lines 49-56.) Trulson et al. discloses using four fluorescent dyes. While the reference does not explicitly refer to calibration dye spots using a single pure dye, it is reasonable to infer that single pure dye spots were used for calibration as such dye spots appear to have been routine in the art at the time of the invention. (See at least Schermer et al., U.S. Patent No. 6,075,613 at column 2, lines 20-50.)

Brown et al. discloses a method and system for scanning nucleic acid microarrays using two-color fluorescent detection and correcting optical crosstalk caused by overlapping dye emission spectra (see columns 16-17). Glass slides are disclosed. (See column 12, lines 3-5.) The array was scanned using a laser fluorescent scanner. The scanned image was gridded and analyzed using image analysis software. Crosstalk between the fluorophores due to their overlapping emission spectra was corrected. (See column 17, lines 2-4.) While the reference does not explicitly refer to calibration dye spots using a single pure dye, it is reasonable to infer that single pure dye spots were used for calibration as such dye spots appear to have been routine in the art at the time of the invention. (See at least Schermer et al., U.S. Patent No. 6,075,613 at column 2, lines 20-50.) In addition, Brown et al. does not disclose use of three or more dyes.

Ginestet discloses M-FISH or multi-fluor fluorescence in situ hybridization and cross-talk compensation for three or more fluorescent dyes. The matrix algebra for the correction factors from pure dye spots are disclosed. (See at least abstract; Figure 8; column 2, lines 30-40; column 5, lines 35-50; and columns 9-11.) Ginestet does not explicitly disclose microarrays or chips containing nucleic acids.

If pure dye spots for calibration were not used in the nucleic acid microarray methods of Trulson et al. or Brown et al. (as appears to have been common practice as evidenced by Schermer et al.), then it would have been obvious to do so given the teachings of Ginestet which explicitly disclosing such pure dyes for calibration to correct cross-talk due to overlapping dye emission spectra in nucleic acid hybridization.

In addition, it would have been obvious to one of ordinary skill in the art to apply the cross-talk correction matrix algebra for three or more dyes as taught by Ginestet to the microarray technology and applications as taught by Trulson et al. and Brown et al. Each of the references make clear that use of fluorescent dyes in nucleic acid hybridization applications was common at the time of the invention and that cross-talk due to overlapping emission spectra was a well known problem. Trulson et al. and Ginestet make clear that using three or more fluorescent dyes was routine and desirable in nucleic acid hybridization applications. It would have been obvious to correct or compensate for cross-talk using techniques well known to those of ordinary skill in the art.

(11) Response to Argument

The recitation of "quantitation" data was introduced into claims 1 and 10 in the amendment filed 10/7/02. This response argued that this "quantitation" limitation distinguished

over the art applied. Claims must be interpreted as broadly as their terms reasonably allow. The words of the claim must be given their plain meaning unless appellant has provided a clear definition in the specification. In this case, the specification does not provide a definition for "quantitation data." Basis for this phrase has been pointed to only in the abstract. As such, the phrase must be read as it would be interpreted by those of ordinary skill in the art. In this art, "quantitation" data is considered to mean data that is quantified in any way. Clearly, each of Trulson et al., Brown et al., and Ginestet quantitate the dye fluorescence data and correct for cross-talk due to overlapping emission spectra based on this quantitation data.

Appellant's response on page 6 of the brief quotes two references by Schena. "Quantitation is usually accomplished by superimposing a grid." "Typically, a user-defined gridding pattern is overlaid on the image." Note that the terms "usually" and "typically" indicate that other methods could have been used. Note that the specification does not reference the Schena (April 1999) document such that one of ordinary skill in the art might have been informed that this was a contemplated embodiment. Note that Schena (January 2000) was published after the effective filing date and would not have been available to one of ordinary skill in the art at the time of the invention. To the degree that appellant believes that the phrase "quantitate data" provides a specific claim limitation requiring the method and system to implicitly include a gridding pattern overlaid on an image, this is not agreed with. Finally, it is noted that Brown et al. specifically discloses that the scanned image was gridded and analyzed using image analysis software. Even if the claims could be amended to specifically recite such a limitation, the prior art of record suggests this type of analysis.

Appellant's response on page 8 of the brief states, "The Examiner concedes that this feature is neither taught, disclosed or discussed by any of the prior art references of record taken either alone or in combination with one another." This is disagreed with. Such a concession would mean that no art rejection was applicable and in view of the art rejection of record, appellant has made a clearly incorrect statement. The statement in the final Office action dated 12/24/2002 indicates that the examiner understood appellant's argument about what "quantitation data" meant but did not agree.

In view of the above, the claimed method and system are obvious over the prior art.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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December 24, 2003

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